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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/641,155	08/17/2000	Spencer Wayne Bruce	99-056	4735

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EXAMINER

PERRIN, JOSEPH L

ART UNIT

PAPER NUMBER

1746

DATE MAILED: 09/11/2003

17

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/641,155

Applicant(s)

BRUCE ET AL.

Examiner

Joseph L. Perrin, Ph.D.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8 is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Response to Arguments

1. In view of applicant's amendment filed 05 August 2003 (Paper No. 16), the status of the application is as follows:

35 U.S.C. §102(b) Rejections over Reuter

2. The rejection of claims 7, 9 and 10 are withdrawn in view of applicant's amendment canceling the rejected claims.

35 U.S.C. §103(a) Rejections over Petermann and Komabashiri

3. The rejection of claims 1-6 are maintained for at least reasons set forth below.
4. Applicant argues that the cleaning nozzles in Petermann must follow programmable paths which must be controlled by a computer rather than by the reaction operator. However, Petermann teaches that the nozzles *may* be controlled by an electronic computer (column 1, line 33) and simply does not require computer control.
5. Applicant further argues that Komabashiri does not "perfect the teaching of Petermann." This is not persuasive because Komabashiri clearly discloses the cleaning deficiencies of "high-pressure jet cleaning" (see, for instance, column 1, lines 28-32) and the improved cleaning of a polymerization reactor by rotating an agitator "to effect chemical cleaning", *i.e.* improve chemical cleaning (see, for instance, column 4, line 57

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– column 5, line 13). Komabashiri clearly provides motivation for reversal of essential working parts, *i.e.* rotating an agitator, for the purpose of improved cleaning.

6. Therefore, the position is taken that a person of ordinary skill in the art at the time the invention was made would have been motivated to clean a reactor wherein the pressure sources are stationary and wherein the agitator is rotated while the solution is fed to the reactor, disclosed by Komabashiri, in place of wherein the agitator is stationary and the pressure sources are rotated while the solution is fed to the reactor, disclosed by Petermann, because one would have arrived at the same expected results (*i.e.* improved cleaning) since it has been held that a mere reversal of the essential working parts of a device involves only routine skill in the art. *In re Einstein*, 8 USPQ 167; *In re Gazda*, 104 USPQ 400 (CCPA 1955). The rearrangement of parts was also held to have been obvious. *In re Japikse*, 86 USPT 70 (CCPA 1950).

7. As stated above, the reversal of parts and the rearrangement of parts was held to have been obvious and would have also arrived at the same expected results by making the pressure sources stationary and rotating the agitator blade while the solution is fed to the reactor. Unless applicant can show unexpected results, such a modification would have been obvious.

35 U.S.C. §103(a) Rejections over Rueter and Komabashiri

8. The rejection of claim 8 is withdrawn in view of applicant's amendment and arguments. The combination of Rueter and Komabashiri teach each and every limitation of claim 8 with the exception of cleaning a reactor heat exchanger selected

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from a plate-frame heat exchanger, a plate-fin heat exchanger and a spiral-plate heat exchanger.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 3,985,572 to Petermann (hereinafter "Petermann") in view of U.S. Patent No. 4,863,524 to Komabashiri *et al.* (hereinafter "Komabashiri").

Re claims 1, 2 and 4, Petermann discloses a process of feeding a solution of water through multiple pressure sources to a reactor having an agitator with blades and pressure sources aimed at the agitator blades (column 5, lines 18-25; column 9, lines 27-48); emptying the reactor (Figure 1); wherein the multiple pressure sources are hoses equipped with nozzles (column 5, lines 18-25); wherein the water is fed to the reactor at a pressure from 2,000 psi (138 bar) to 6,000 psi (414 bar) (column 5, lines 18-25); and wherein the reactor is equipped with a heat exchanger in an external loop (Figures 8A-8F; column 4, lines 52-60).

Although Petermann does not explicitly disclose wherein the pressure sources are stationary nor wherein the agitator is rotated while the solution is fed to the reactor, Petermann does disclose wherein the agitator is stationary and the pressure sources are rotated while the solution is fed to the reactor (column 1, lines 27-43; column 9, lines 27-48).

Komabashiri teaches that it is known to clean polymerization reactors using "high-pressure jet cleaning" (column 1, lines 28-32) and rotating an agitator "to effect chemical cleaning", *i.e.* improve chemical cleaning (column 4, line 57 – column 5, line 13). Therefore, the position is taken that a person of ordinary skill in the art at the time the invention was made would have been motivated to clean a reactor wherein the

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pressure sources are stationary and wherein the agitator is rotated while the solution is fed to the reactor, disclosed by Komabashiri, in place of wherein the agitator is stationary and the pressure sources are rotated while the solution is fed to the reactor, disclosed by Petermann, because one would have arrived at the same expected results (*i.e.* improved cleaning) since it has been held that a mere reversal of the essential working parts of a device involves only routine skill in the art. *In re Einstein*, 8 USPQ 167; *In re Gazda*, 104 USPQ 400 (CCPA 1955). The rearrangement of parts was also held to have been obvious. *In re Japikse*, 86 USPT 70 (CCPA 1950).

Re claims 1, 3, 5 and 6, Petermann does not explicitly disclose wherein the hoses are made of 316 stainless steel or wherein the cleaning liquid is aqueous base or caustic, but does disclose utilizing multiple nozzles with hoses to pressure clean a polymerization reactor with pressurized cleaning liquid (column 5, lines 1-25).

Komabashiri teaches that it conventional to utilize material in a polymerization reactor, agitator, and baffle-plates of 316 stainless steel (column 4, lines 51-56) for improved corrosion resistance, and wherein the cleaning agent is aqueous base or caustic at a temperature of 100°C or less achieving a remarkable chemical cleaning effect (column 3, line 61 – column 4, line 20).

Therefore, the position is taken that a person of ordinary skill in the art at the time the invention was made would have been motivated to modify the polymerization reactor cleaning system, disclosed by Petermann, with 316 stainless steel material and cleaning solution of aqueous base or caustic at 100°C, disclosed by Komabashiri, in order to provide improved polymerization reactor cleaning while maintaining

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advantageous corrosion resistance. Further, the use of conventional material to perform their known functions in a conventional process is obvious. *In re Raner*, 134 USPQ 343 (CCPA 1962).

Allowable Subject Matter

13. Claim 8 is allowed.

14. The following is a statement of reasons for the indication of allowable subject matter:

15. The closest prior art of record, US 5,782,989 to Rueter and US 4,863,524 to Komabashiri *et al.*, fail to teach each and every limitation of the instant invention. Specifically, although the references do disclose the a process for cleaning a heat exchanger reactor, the references fail to teach or suggest the claimed process for cleaning a heat exchanger reactor wherein the heat exchanger reactor is either a plate-frame, a plate-fin, or a spiral-plate heat exchanger, which is disclosed as the essential element of claimed invention, as described in claim 8.

16. For at least the foregoing reasons, claim 8 is believed to recite patentable subject matter.

Conclusion

17. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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18. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

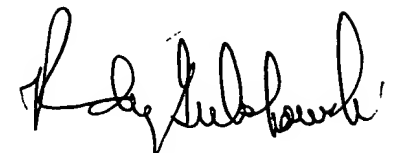
19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph L. Perrin, Ph.D. whose telephone number is (703)305-0626. The examiner can normally be reached on M-F 7:30-5:00, except alternate Fridays.

20. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (703)308-4333. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

21. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.

Joseph L. Perrin, Ph.D.
Examiner
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jlp



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